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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/551,233	06/07/2006	Yuichi Fukunaga	278687US0PCT	4292
22850	7590	04/30/2008	EXAMINER	
OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314			AHVAZI, BIJAN	
			ART UNIT	PAPER NUMBER
			4171	
			NOTIFICATION DATE	DELIVERY MODE
			04/30/2008	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No. 10/551,233	Applicant(s) FUKUNAGA ET AL.	
	Examiner BIJAN AHVAZI	Art Unit 4171	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>06/01/2007 and 08/08/2007</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Claim Rejections - 35 USC § 102

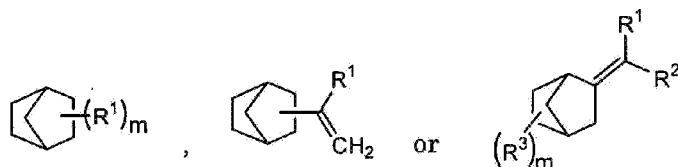
1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102(b) that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

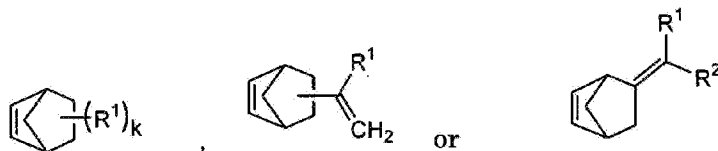
(b) The invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 2, 3, 4-6, are rejected under 35 U.S.C. 102(b) as being anticipated by Tsubouchi *et al.* (Pat. No. US 5,126,065).

The applicants claim: An immersion oil for microscopes which comprises a hydrogenation product of a monomer to a tetramer of at least one compound selected from (A) norbornanes and (B) norbornenes. , wherein (A) the norbornanes are represented by any of general formulae:



Wherein R^1 , R^2 and R^3 each represent hydrogen atom or an alkyl group having 1 to 10 carbon atoms, and m represents an integer of 1 to 3, wherein (B) the norbornenes are represented by any of general formulae:



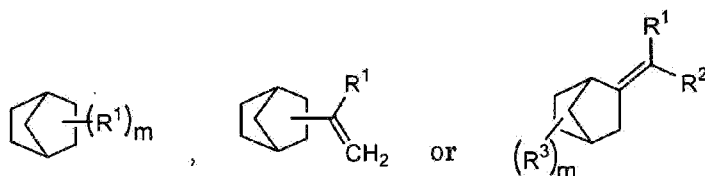
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Wherein R1 and R2 each represent hydrogen atom or an alkyl group having 1 to 10 carbon atoms, and k represents an integer of 1 to 3.

3. Tsubouchi *et al.* discloses a process for improving the coefficient of traction at high temperatures in a traction drive, and a traction drive fluid. The traction drive fluid comprises the hydrogenated product of a dimer, a trimer or a tetramer of norbornanes and/or norbornenes, and exhibits traction performance over a wide temperature (abstract and page 19, claims 2). Preferred norbornanes among them are those represented by the general formula:

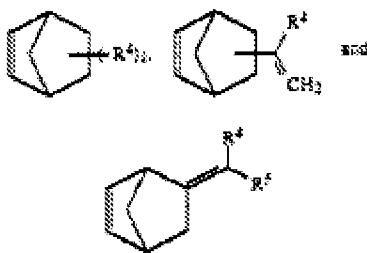


Wherein the selected compounds from the instant application are represented by any of the general formula:

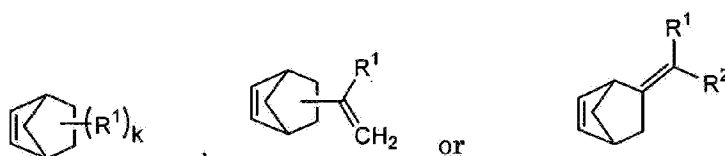


Wherein, R⁴, R⁵ and R⁶ in the reference are each a hydrogen atom or an alkyl group having 1 to 3 carbon atoms, preferably, R⁴, R⁵ and R⁶ are each a hydrogen atom or a methyl group, and m is an integer 1 or 2. Specific examples of such norbornanes are alkenylnorbornanes such as vinylnorbornane, and isopropenylnorbornane; alkylidenenorbornanes such as methylenenorbornane, ethylidenenorbornane, isopropylidenenorbornane, 3-methyl-2-methylenenorbornane, and 3, 3-dimethyl-2-methylenenorbornane (page 3, lines 54 and page 19, claim 3). The preferred norbornenes are those represented by the general formula:

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Wherein the selected compounds from the instant application are represented by any of the general formula:



Wherein, R^4 and R^5 in the reference are as defined above and k is an integer of 1 or 2. Specific examples of these norbornenes are norbornene; alkylnorbornenes such as methylnorbornene, ethylnorbornene, isopropylnorbornene, and dimethylnorbornene; alkenylnorbornenes such as vinylnorbornene, and isopropenylnorbornene; alkylidenenorbornenes such as methylenenorbornene, ethylidenenorbornene, and isopropylidenenorbornene (page 4, lines 4 and page 19 claims 4). In the hydrogenation process as in the reference discloses dimerization, trimerization, and tetramerization, a solvent that can be used include most of the liquid saturated hydrocarbons (page 5, line 62) such as n-pentane, n-hexane, heptane, octane, nonane, decane, dodecane, cyclopentane, cyclohexane, and methylcyclohexane. In addition, liquid compounds among aromatics (page 5, line 68), olefins, alcohols, ketones, and ethers can also be utilized. Particularly suitable are saturated hydrocarbons. Some specific examples of the liquid diene are disclosed in some of the examples of Tsubouchi *et al.* (page 10,

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example 9, and line 44) that satisfy the applicant limitation claims 4-6. Therefore all the instant application claims 1, 2, 3, 4-6 are as being anticipated by Tsubouchi *et al.*

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

6. Claims 1, 2, 3, 4-8, 9-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tsubouchi *et al.* (Pat. No. US 5,126,065).

7. The instant application claims immersion oil for microscopes which comprises a hydrogenation product of a monomer to a tetramer of at least one compound selected from norbornanes and norbornenes. The immersion oil comprises further from an aromatic ester (an ester of phthalic acid), an aromatic ketone and aromatic ether.

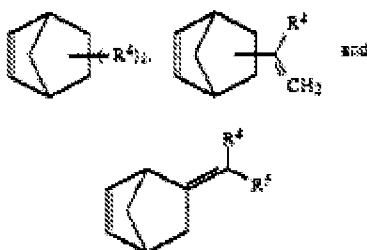
Determination of the scope and content of the prior art (MPEP §2141.01)

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Tsubouchi *et al.* discloses a process for improving the coefficient of traction at high temperatures in a traction drive, and a traction drive fluid (abstract and page 19 claims 2), which comprises the hydrogenated product of a dimer, a trimer or a tetramer of norbornanes (page 3, lines 54 and page 19 claim 3) and/or norbornenes. Preferred norbornanes among them are those represented by the general formula:



Wherein, R^4 , R^5 and R^6 in the reference are each a hydrogen atom or an alkyl group having 1 to 3 carbon atoms, preferably, R^4 , R^5 and R^6 are each a hydrogen atom or a methyl group, and m is 1 or 2. The preferred norbornenes are those represented by the general formula:



Wherein, R^4 and R^5 in the reference are as defined above and k is an integer of 1 or 2 (page 4, lines 4 and page 19 claims 4). In the hydrogenation process of dimerization, trimerization, and tetramerization, a solvent that can be used include most of the liquid saturated hydrocarbons (page 5, line 62) such as n-pentane, n-hexane, heptane, octane, nonane, decane, dodecane, cyclopentane, cyclohexane, and methylcyclohexane. In addition, liquid compounds among aromatics (page 5, line 68), olefins, alcohols, ketones, and ethers can also be utilized. Particularly suitable are saturated hydrocarbons. In addition, a reaction controlling agent is used

in order to favor the reaction of norbornanes or norbornenes, particularly to increase the selectivity of the dimerization, trimerization, and tetramerization reaction. As the reaction controlling agent, carboxylic acids such as acetic acid, acid anhydrides such as acetic anhydride and phthalic anhydride, cyclic esters such as γ -butyrolactone and valerolactone, glycols such as ethylene glycol, mononitro compounds such as nitromethane and nitrobenzene, esters such as ethyl acetate, ketones such as mesityl oxide, aldehydes such as formalin and acetaldehyde, cellosolve, polyalkylene glycol alkyl ethers such as diethylene glycol monoethyl ether, and the like can also be utilized (page 5, line 17-30).

Ascertainment of the difference between the prior art and the claims (MPEP §2141.02)

Tsubouchi *et al.* does not disclose explicitly an aromatic substituitions such as an aromatic ester (an ester of phthalic acid), an aromatic ketone and aromatic ether, but explicitly encloses the use materials containing acid groups, phthalic anhydride as well as esterified materials.

Finding of prima facie obviousness---rational and motivation (MPE P §2142.2413)

The prior art would lead one to use aromatic esters based on the disclosure of aromatic acid compounds used in other forms and ester materials. Given the disclosure of Tsubouchi *et al.*, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have used aromatic esters such as (an ester of phthalic acid), because generically esters are useful in the prior art.

Prior-Art Cited But Not Applied

Any prior-art reference which is cited on FORM PTO-892 but not applied is cited to show the general state of the prior-art at the time of the application's invention. Weippert *et al.* (Pat. No.

US 5,817,256) discloses the invention which is directed to immersion oil for microscopy. The immersion oil includes an ester or ether with tricyclodecane structure as a main constituent and one or more high-boiling liquids as minor constituents. Lachowicz *et al.* (Pat. No. JP 2007-056024) discloses the method for producing the norbornene derivative comprises carrying out Diels-Alder reaction of a compound containing an allyl group having a weakly electron attractive functional group with an alkylcyclopentadiene dimer(from the machine translation, a copy is supplied). The complete STN search is also included to indicate the further use of norbornanes and/or norbornenes compound in immersion oil for microscope.

Examiner Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Bijan Ahvazi whose telephone number is (571)270-3449. The examiner can normally be reached on M-F 8:0-5:0. (Off every other Friday).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, D. Lawrence Tarazano can be reached on 571-272-1515. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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/D. Lawrence Tarazano/
Supervisory Patent Examiner, Art Unit 4171

Bijan Ahvazi, Ph.D.
Examiner
Art Unit 4171

/BA/